

Claims:

1. A band pass filter formed on an integrated circuit (IC) chip, said band pass filter comprising:

a transformer capable of receiving an input signal and providing high pass filtering, said transformer comprising at least a pair of metallic spirals formed on the IC chip; and

a capacitor capable of receiving said input signal and providing low pass filtering in conjunction with an inductance of the transformer,

wherein said band pass filter provides band pass filtering through cascading said high pass and low pass filtering.

2. The band pass filter of claim 1, further comprising a plurality of band pass filter stages, each band pass filter stage comprising a capacitor and a transformer comprising a pair of metallic spirals formed on the IC chip, wherein said band pass filter stages are cascaded to form the band pass filter.

3. The band pass filter of claim 1, wherein said metallic spirals comprise copper spirals.

4. The band pass filter of claim 1, wherein the transformer comprises a pair of transformers arrayed in series, wherein each transformer comprises a pair of metallic spirals.

5. The band pass filter of claim 1, wherein the metallic spirals are co-planer and have been inter-wound to form the transformer on the IC chip.

6. The band pass filter of claim 1, wherein the metallic spirals are stacked, one on top of the other, to form the transformer on the IC chip.

7. The band pass filter of claim 6, wherein the metallic spirals are separated by a dielectric material disposed therebetween.

8. The band pass filter of claim 7, wherein the dielectric material comprises silicon dioxide.

9. The band pass filter of claim 1, wherein communication circuitry is formed on the same IC chip as the transformer and the capacitor.

10. The band pass filter of claim 1, wherein a transformation ratio of the transformer is between approximately 1:1 and approximately 1:2.

11. The band pass filter of claim 1, wherein the IC chip comprises a silicon substrate.

12. The band pass filter of claim 1, wherein the metallic spirals have a substantially rectangular or square overall shape.

13. A communication system-on-chip (SOC) comprising communication circuitry and a band pass filter formed on an integrated circuit (IC) chip, said band pass filter comprising:

a transformer capable of receiving an input signal and providing high pass filtering, said transformer comprising at least a pair of metallic spirals formed on the IC chip; and

a capacitor capable of receiving said input signal and providing low pass filtering in conjunction with an inductance of the transformer,

wherein said band pass filter provides band pass filtering through cascading said high pass and low pass filtering.

14. The communication SOC of claim 13, wherein the band pass filter further comprises a plurality of band pass filter stages, each band pass filter stage comprising a capacitor and a transformer comprising a pair of metallic spirals formed on the IC chip, wherein said band pass filter stages are cascaded to form the band pass filter.

15. The communication SOC of claim 13, wherein said metallic spirals comprise copper spirals.

16. The communication SOC of claim 13, wherein the transformer comprises a pair of transformers arrayed in series, wherein each transformer comprises a pair of metallic spirals.

17. The communication SOC of claim 13, wherein the metallic spirals are coplanar and have been inter-wound to form the transformer on the IC chip.

18. The communication SOC of claim 13, wherein the metallic spirals are stacked, one on top of the other, to form the transformer on the IC chip.

19. The communication SOC of claim 18, wherein the metallic spirals are separated by a dielectric material disposed therebetween.

20. The communication SOC of claim 19, wherein the dielectric material comprises silicon dioxide.

21. The communication SOC of claim 13, wherein a transformation ratio of the transformer is between approximately 1:1 and approximately 1:2.

22. A communication device comprising:
a communication system-on-chip (SOC) comprising communication circuitry and a band pass filter formed on an integrated circuit (IC) chip, said band pass filter comprising:

a transformer capable of receiving an input signal and providing high pass filtering, said transformer comprising at least a pair of metallic spirals formed on the IC chip; and

a capacitor capable of receiving said input signal and providing low pass filtering in conjunction with an inductance of the transformer,

wherein said band pass filter provides band pass filtering through cascading said high pass and low pass filtering.

23. The communication device of claim 22, wherein the band pass filter further
5 comprises a plurality of band pass filter stages, each band pass filter stage comprising a capacitor and a transformer comprising a pair of metallic spirals formed on the IC chip, wherein said band pass filter stages are cascaded to form the band pass filter.

24. The communication device of claim 22, wherein said metallic spirals comprise
10 copper spirals.

25. The communication device of claim 22, wherein the transformer comprises a
pair of transformers arrayed in series, wherein each transformer comprises a pair of metallic
spirals.

26. The communication device of claim 22, wherein the metallic spirals are co-
15 planer and have been inter-wound to form the transformer on the IC chip.

27. The communication device of claim 22, wherein the metallic spirals are
20 stacked, one on top of the other, to form the transformer on the IC chip.

28. The communication device of claim 27, wherein the metallic spirals are
separated by a dielectric material disposed therebetween.

29. The communication device of claim 28, wherein the dielectric material
25 comprises silicon dioxide.

30. The communication device of claim 22, wherein a transformation ratio of the
transformer is between approximately 1:1 and approximately 1:2.

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